

### PREVIOUS "NEW MATTER" REJECTIONS

In the final Office Action dated June 6, 2001 in parent application Serial Number 09/301,309 ("final parent Action"), the Examiner rejected claims 6, 18, and 28 under 35 U.S.C. § 112, first paragraph, as containing new matter.<sup>1</sup>

Applicants respectfully disagree with the Examiner's statement in the May 11, 2001 Interview Summary included with the final parent Action that it was "agreed" that claims 6, 18 and 28 contained new matter. Claims 6, 18, and 28 recite that the fossil fuel is selected from the group consisting of methane, fuel oil, fossil coal dust, and mixtures thereof. In the Office Action prior to the final parent Action, the Examiner required deletion of the phrase "mixtures thereof." Applicants continue to believe that the specification, for example, at page 9, lines 7-8, provides support in that the teaching of instantaneously combusting fuel material comprising at least one fossil fuel, clearly suggests to one skilled in the art that more than one type of fossil fuel can be mixed. In addition, Fig. 7 also illustrates various supply flows 42A, 43A, and 45 to bring in methane, fuel oil, and coal dust, respectively. One skilled in the art would understand from the Fig. 7 disclosure that these flows may be mixed prior to entering burners 12. Thus, claims 6, 18, and 28 meet the requirements of 35 U.S.C. § 112, first paragraph.

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<sup>1</sup> The Advisory Action dated September 18, 2001 specifically addressed only Applicants' arguments regarding the "new matter" rejections of claims 6, 18, and 28. However, the arguments are being presented here again to preserve this issue for possible appeal.

PREVIOUS REJECTIONS OVER FR '861

In the final parent Action, the Examiner also rejected claims 23-28 under 35 U.S.C. § 102(b) as being anticipated by, or, in the alternative under 35 U.S.C. § 103(a), as being obvious over, French Patent No. 2,273,861 (FR '861).

Claim 23<sup>2</sup> as amended herein is patentably distinguishable from FR '861 in that it recites a combustion method comprising the steps of, for example, feeding the flame of a burner of an instantaneous-combustion boiler with a flow of fuel composition, and combusting at least 90% by weight of the fuel composition fed into the burner in less than 10 seconds. The fuel composition includes from 40 to 95% by weight of an instantaneously combusting fossil fuel, and from 60 to 5% by weight of a non-fossil solid fuel including urban solid waste and at least a further component selected from the group consisting of elastomeric polymer materials, non-elastomeric polymer materials, and mixtures thereof, which has been suitably treated so as to be instantaneously combustible.

FR '861 does not disclose, teach, or suggest the combustion method of claim 23 at least because FR '861 does not disclose, teach, or suggest the required urban solid waste non-fossil fuel feeding step. Therefore, Applicants submit that independent claim 23, and claims 24-28 at least due to their dependence upon claim 23, do not recite

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<sup>2</sup> Claim 23 has been amended to require an urban solid waste component in the non-fossil fuel feeding step. The version of claim 23 previously considered by the Examiner in her June 6, 2001 final Office Action in the parent application, provided urban solid waste only as an optional component.

subject matter that is anticipated or rendered obvious by FR '861, and thus are in condition for allowance.

PREVIOUS  
REJECTIONS OVER SCHULZ AND BLAUSTEIN ET AL.

In the final parent Action, the Examiner also rejected claims 1-6, 9-18, 23-28, and 34-36 under 35 U.S.C. § 103(a) as being unpatentable over Schulz (U.S. Patent No. 4,152,119) in view of Blaustein et al. (U.S. Patent No. 4,405,331).

**A. Claims 1-6, 9-18, and 23-28:**

The Examiner asserts that the claimed feature of "at least 90% by weight of the fuel composition fed into a burner is combusted in less than 10 seconds" is inherent in the prior art fuel composition because the fuel composition are of the same components and in the same relative proportion. This position is respectfully traversed as untenable based on the teachings of those prior art references as would be understood by those skilled in the art.

Initially, the Specification clearly distinguishes the instant invention over apparatus and methods for combusting agglomerated fuel materials for a period of time greater than or equal to one (1) minute. Indeed, owing to their dimensions, the agglomerated fuel materials cannot be used to feed "instantaneous-combustion burners" (Specification, page 2, line 26, to page 3, line 17). See also, Specification page 6, line 15, to page 7, line 10.

The fuel in Schultz is agglomerated in the form of briquettes or pellets having a diameter from 1" to 12" (col. 5, lines 33 to 47). The agglomerated fuel in Schultz is gasified on a moving grate (col. 2, lines 24 to 27), or in a shaft furnace (col. 10, lines 59 to 63; col. 12, lines 1 to 8). The gasification step takes 45 minutes in Example 1 (col. 8,

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lines 60 to 62), 60 minutes in Example 3 (col. 9, line 50), and 85 minutes in Example 9 to consume 75% of the charge (col. 12, lines 9 to 11). The presently pending claims require 90% by weight of the fuel composition to be combusted in less than 10 seconds.

Blaustein et al. discloses a fuel material comprising solid refuse, fly ash, and a binder (col. 2, lines 17 to 20). The Blaustein et al. fuel material is agglomerated in the form of pellets  $\frac{3}{4}$ " in diameter by  $\frac{3}{4}$ " long (col. 4, lines 29 to 30) or  $\frac{5}{8}$ " in diameter 1" long (Examples 1 to 31). Blaustein et al. are silent about the combustion apparatus and methods, much less the combustion times. However, one skilled in the art working with Schultz would understand that at least the "combusting at least 90%. . . in less than 10 seconds" limitation is neither taught nor suggested. Consequently, claims 1-6, 9-18, and 23-28 are allowable over Schulz and Blaustein et al. which do not "inherently" (that is, invariably) disclose this feature.

**B. Claims 34-36:**

With respect to the Examiner's rejection of claims 34-36 under 35 U.S.C. § 103(a) as being unpatentable over Schulz in view of Blaustein et al., Applicants respectfully traverse as explained below.

Claim 34 patentably distinguishes the present invention from the references cited, including Schulz and Blaustein et al., considered either alone or in combination, in that it recites a combustion method comprising the steps of, for example, feeding a fuel composition into a zone of a boiler, said zone having predetermined temperature value . . . wherein said predetermined temperature value is selected so that non-combusted materials are contained in said amount of heavy ash in an amount of less than 50% by weight.

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In contrast, none of the references discloses, teaches, or suggests the claimed predetermined temperature value being selected so that non-combusted materials are contained in the amount of heavy ash in an amount of less than 50% by weight. In fact, neither Schulz nor Blaustein et al. teach any combustion method or disclose or suggest a temperature for a boiler in the feeding zone. Schulz teaches a composition and method of making briquettes or compacted fuel made of caking coal and municipal solid waste (MSW). Similarly, Blaustein et al. teaches a composition and method of making refuse derived fuel formed in the shape of pellets by extrusion or compression means. Neither Schulz nor Blaustein et al. discloses, teaches, or suggests any temperature for the feeding zone of a boiler so that non-combusted materials are contained in the amount of heavy ash in an amount of less than 50% by weight.

Likewise, claim 36 patentably distinguishes the present invention from the references cited, including Schulz and Blaustein et al., considered either alone or in combination, in that it recites a combustion method comprising the steps of, for example, generating an amount of heavy ash from the combustion step, wherein the non-fossil fuel has a predetermined particle size so that non-combusted materials are contained in the amount of heavy ash in an amount of less than 50% by weight.

In contrast, none of the references discloses, teaches, or suggests the claimed combustion method. Particularly, neither Schulz nor Blaustein et al. discloses, teaches, or suggests the step of generating an amount of heavy ash wherein the non-fossil fuel has a predetermined particle size so that non-combusted materials are contained in the amount of heavy ash in an amount of less than 50% by weight.

Therefore, independent claims 34 and 36, as well as dependent claim 35 at least due to its dependence upon claim 34, do not recite subject matter that is rendered obvious by either Schulz or Blaustein et al., and thus are in condition for allowance.

**C. Claims 37 and 43:**

Finally, the Examiner rejected claims 37 and 43 under 35 U.S.C. § 103(a) as being unpatentable over Schulz in view of Blaustein et al. as applied to claims 1-6, 9-18, 23-28, 31<sup>3</sup>, and 34-36, and further in view of French Patent No. 2,733,303 (FR '303).

None of the references relied on by the Examiner discloses or suggests a combustion plant where a burner is fed with a flow of at least one instantaneously combusting fossil fuel, and where a flow of at least one instantaneously combusting non-fossil fuel is fed into said flow of at least one instantaneously combusting fossil fuel. Schultz teaches gasification of coal and organic solid waste formed into briquettes (col. 4, lines 29-38) which one skilled in the art would consider not to be an "instantaneously combusting" fuel form, as discussed previously. In fact, Schultz teaches avoiding "fines," i.e., small particle sizes. See e.g. col. 4, lines 57-58.

Blaustein et al. are silent about the combustion apparatus and methods, but clearly teach forming "fuel pellets" (e.g. col. 5, lines 34-40) and thereby exhibits the same contrary teaching as Schultz.

Finally, FR '303 discloses an apparatus provided with a grid 3 on which household waste is placed and incinerated by a lower burner 21. An upper burner 22 burns fumes and gases developed by the combustion in order to avoid releasing of

<sup>3</sup> Claim 31 has been cancelled from this application.

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polluting fumes and gases in the air. FR '303 does not specify a solid waste fuel size much less teach or suggest use of an "instantaneously combusting" non-fossil fuel.

Therefore, the combination of Schultz or Blaustein et al. with FR '303 would merely lead to a plant where the agglomerated non-instantaneously combusting fuel compositions of Schultz or Blaustein et al. are incinerated over an extended period of time. Accordingly, claims 37 and 43 do not recite subject matter that is rendered obvious by Schulz, Blaustein et al. or FR '303, and are thus in condition for allowance.


Applicants, therefore, request the Examiner's examination of this application, and the timely allowance of all the pending claims. For the Examiner's convenience, Appendix To Preliminary Amendment is included with the requested amendments to the originally filed claims shown with brackets and underlining respectively designating omitted material and added material.

Respectfully submitted,

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Date: February 20, 2002

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Enclosure: Appendix

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**APPENDIX TO PRELIMINARY AMENDMENT**

**Version with Markings to Show Changes Made**

Amendments to the Claims

1. (Amended) A fuel [Fuel] composition [which combusts instantaneously],  
comprising:  
  
from 40 to 95% by weight of [an instantaneously combusting] a fossil fuel; and  
  
from 60 to 5% by weight of a non-fossil solid fuel [chosen from the group]  
including [comprising] urban solid waste, and at least a further component selected from  
the group consisting of elastomeric [and] polymer materials, non-elastomeric polymer  
materials and mixtures thereof, [this fuel being suitably treated so as to be  
instantaneously combustible]  
  
wherein at least 90% by weight of the fuel composition fed into a burner is  
combusted in less than 10 seconds.
2. (Amended) Composition according to Claim 1, in which the amount of  
[the] said [instantaneously combusting] fossil fuel is between 50 and 90% by weight.
4. (Amended) Composition according to Claim 1, in which the amount of  
[the] said [instantaneously combusting] fossil fuel is between 60 and 80% by weight.



6. (Amended) Composition according to [any one of the preceding Claims 1 to 5] Claim 1, in which the [instantaneously combusting] fossil fuel [is chosen from the group comprising] is selected from the group consisting of methane, fuel oil, [which may be in emulsion form, and] fossil coal dust [which may be in suspension form], and mixtures thereof.

9. (Amended) Composition according to [any one of the preceding Claims 1 to 8] Claim 1, in which the non-fossil solid fuel has an apparent density [is] equal to or less than  $0.6\text{g/cm}^3$ .

10. (Amended) A fuel [Fuel] composition [which combusts instantaneously], comprising:

from 40 to 95% by weight of [an instantaneously combusting] a fossil fuel; and

from 60 to 5% by weight of particles less than 1 mesh in size of a non-fossil solid fuel [chosen from the group comprising] including urban solid waste, and at least a further component selected from the group consisting of elastomeric polymer materials, [and] non-elastomeric polymer materials, and mixtures thereof,

wherein at least 90% by weight of the fuel composition fed into a burner is combusted in less than 10 seconds.

11. (Amended) Composition according to Claim 10, in which at least 90% by weight of the [abovementioned] particles are smaller than 2 mesh in size.

12. (Amended) Composition according to Claim 10, in which at least 50% by weight of the [abovementioned] particles are smaller than 4 mesh in size.

13. (Amended) Composition according to [any one of the preceding Claims 10 to 12] Claim 10, in which the particles [of] comprise non-elastomeric polymer material [are] of less than 5 mm in size.

14. (Amended) Composition according to [any one of the preceding Claims 10 to 13] Claim 10, in which the amount of [the] said [instantaneously combusting] fossil fuel is between 50 and 90% by weight.

15. (Amended) Composition according to [any one of the preceding Claims 10 to 13] Claim 10, in which the amount of [the] said non-fossil solid fuel is between 50 and 10% by weight.

16. (Amended) Composition according to [any one of the preceding Claims 10 to 13] Claim 10, in which the amount of [the] said [instantaneously combusting] fossil fuel is between 60 and 80% by weight.

17. (Amended) Composition according to [any one of the preceding Claims 10 to 13] Claim 10, in which the amount of [the] said non-fossil solid fuel is between 40 and 20% by weight.

18. (Amended) Composition according to [any one of the preceding Claims 10 to 17] Claim 10, in which the [instantaneously combusting] fossil fuel [is chosen from the group comprising] is selected from a group consisting of methane, fuel oil, [which

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may be in emulsion form, and] fossil coal dust, [which may be in suspension form] and mixtures thereof.

23. (Amended) A combustion [Combustion] method comprising the steps of:

[in which] feeding the flame of a burner of an instantaneous-combustion boiler [is fed] with a flow of [instantaneously combusting] fuel composition including: [material comprising]

from 40 to 95% by weight of an instantaneously combusting fossil fuel;

and

from 60 to 5% by weight of a non-fossil solid fuel [chosen from the group comprising] selected from the group consisting of urban solid waste, elastomeric polymer materials, [and] non-elastomeric polymer materials, and mixtures thereof, which has been suitably treated so as to be instantaneously combustible;

combusting at least 90% by weight of said fuel composition fed into the burner in less than 10 seconds.

25. (Amended) Combustion method according to Claim [23] 24, in which at least 90% by weight of [the] said particles are less than 2 mesh in size.

26. (Amended) Combustion method according to Claim [23] 24, in which at least 50% by weight of [the] said particles are less than 4 mesh in size.

27. (Amended) [Method] Combustion method according to [any one of the preceding Claims 23 to 26] Claim 23, in which [the] said particles [of] comprise elastomeric polymer [are] particles of less than 5 mm in size.

28. (Amended) [Method] Combustion method according to [any one of the preceding Claims 23 to 27] Claim 23, in which the instantaneously combusting fossil fuel [is chosen from the group comprising] is selected from a group consisting of methane, fuel oil, [which may be in emulsion form, and] fossil coal dust[, which may be in suspension form], and mixtures thereof.

34. (Amended) A combustion [Combustion] method [which comprises] comprising the steps of:

[-]feeding a fuel composition into a zone of a [an instantaneously combusting fossil fuel into an instantaneous-combustion] boiler, said zone having a [preset heat distribution,] predetermined temperature value and said fuel composition including:

at least one instantaneously combusting fossil fuel, and

at least one instantaneously combusting non-fossil fuel selected from the group consisting of urban solid waste, elastomeric polymer materials, non-elastomeric polymer materials, and mixtures thereof;

[-]combusting [the] said fuel [material] composition in [the] said boiler, and

[-]generating [at least a preset] an amount of heavy ash from [following the] said combustion step, [characterized in that it comprises

-feeding a preset amount of an instantaneously combusting non-fossil fuel, chosen from the group comprising USW, elastomeric and non-elastomeric polymer materials and mixtures thereof, into a zone of the said boiler in which a]

wherein said predetermined temperature value is selected so [maintained such] that [the level of] non-combusted materials are contained in [the] said amount of heavy ash [is] in an amount of less than 50% by weight.

35. (Amended) [Method] Combustion method according to Claim 34, in which [the] said zone of the boiler into which [the] said non-fossil fuel is fed has a temperature of not less than 1500°C.

36. (Amended) A combustion [Combustion] method [which comprises] comprising the steps of:

feeding a boiler with [an instantaneously combusting] a fuel composition [material, this method comprising feeding] including:

[a] an instantaneously combusting fossil fuel, and

[a] an instantaneously combusting non-fossil fuel [chosen from the group comprising USW] selected from the group consisting of urban solid waste, elastomeric polymer materials, [and] non-elastomeric polymer materials, and mixtures thereof,

combusting said fuel composition in said boiler,

generating an amount of heavy ash from said combustion step, wherein [in which the] said non-fossil fuel has a predetermined particle size [of the said non-fossil fuel has

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been predetermined such] so that [the level of] non-combusted materials are contained  
in said amount of [in the] heavy ash in an amount of [is maintained at] less than 50% by  
weight.

37. (Amended) A plant [Plant] for [the instantaneous combustion of at least  
one instantaneously] combusting a fuel composition comprising at least one  
instantaneously combusting fossil fuel, and at least one instantaneously combusting  
non-fossil fuel selected from the group consisting of urban solid waste, elastomeric  
polymer materials, non-elastomeric polymer materials, and mixtures thereof, said plant  
comprising:

a boiler[, ] having at least one burner,

a system for supplying said at least one burner with a flow of said [feeding in] at  
least one [said] instantaneously combusting fossil fuel carried by a carrier fluid, and

a system for feeding said at least one [a combustion zone with a temperature  
which is greater than a preset value, characterized in that it also comprises a supply  
device which conveys a] instantaneously combusting non-fossil solid fuel [(NFSF) to the  
said combustion zone] into said flow.

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